

IR-1698 (2-2027)

**LATERAL SUPERJUNCTION SEMICONDUCTOR DEVICE**

**ABSTRACT OF THE DISCLOSURE**

A lateral conduction superjunction semiconductor device has a plurality of spaced vertical trenches in a junction receiving layer of P<sup>-</sup> silicon. An N<sup>-</sup> diffusion lines the walls of the trench and the concentration and thickness of the N<sup>-</sup> diffusion and P<sup>-</sup> mesas are arranged to deplete fully in reverse blocking operation. A MOSgate structure is connected at one end of the trenches and a drain is connected at its other end. An N<sup>-</sup> further layer or an insulation oxide layer may be interposed between a P<sup>-</sup> substrate and the P<sup>-</sup> junction receiving layer.

109290-22416360